

CLAIMS

What is claimed is:

- 5 1. A method for identifying advantageous and non-advantageous
infusion regions in a tissue, said method comprising:
 capturing at least one of (i) functional anatomical data and (ii) structural
anatomical data;
 evaluating the captured anatomical data with computer assistance; and
10 based on the evaluating step, determining infusion distribution information.
2. The method as set forth in claim 1, wherein evaluating the captured
anatomical data includes simulating a distribution of an infusion at a plurality of
regions in the tissue.
- 15 3. The method as set forth in claim 1, wherein the determined infusion
distribution information includes at least one of (i) direction information and (ii)
velocity information relating to infusion regions in the tissue.
- 20 4. The method as set forth in claim 1, wherein the anatomical data is
evaluated two-dimensionally with respect to the distribution information which it
contains.
5. The method as set forth in claim 1, wherein the anatomical data is
25 evaluated three-dimensionally with respect to the distribution information which it
contains.
6. The method as set forth in claim 1, further comprising:
 evaluating the anatomical data over a period of time with respect to the
30 distribution information; and

making adjustments in the distribution information, said adjustments being responsive to anatomical or structural conditions which have changed over the period of time.

5 7. The method as set forth in claim 3, further comprising:
identifying regions of rapid diffusion.

 8. The method as set forth in claim 3, further comprising:
determining isotropy and anisotropy of flow directions in the regions in the
10 tissue.

 9. The method as set forth in claim 1, further comprising:
calculating a distribution volume for an infusion fluid from the functional or
structural anatomical data.

15 10. The method as set forth in claim 1, wherein the functional or
structural anatomical data is captured two-dimensionally.

 11. The method as set forth in claim 10, wherein a number of
20 two-dimensional data sets on the functional or structural anatomical data are
combined to obtain three-dimensional information.

 12. The method as set forth in claim 1, wherein the functional or
structural anatomical data is captured three-dimensionally.

25 13. A method for assisting planning for introducing an infusion fluid into
regions of a brain, said method comprising:
 identifying infusion regions using a method as set forth in claim 1; and
 wherein introducing the infusion at a selected point is planned using
30 stereotactic planning.

14. A method for assisting navigation for introducing an infusion into regions of a brain, said method comprising:

identifying the infusion regions and positions for an infusion device are identified using a method as set forth in claim 1; and

5 wherein introducing the infusion device at a selected point is planned using stereotactic navigation.

15 15. The method as set forth in claim 13, wherein anatomical, functional and/or structural tissue data are combined with information on a distribution of the infusion fluid to be expected for planning or navigation.

16. A program which, when run on a computer or loaded onto a computer, carries out the steps as set forth in claim 1

15 17. A computer program storage medium comprising a program as set forth in claim 16.

18. A device for assisting planning for introducing an infusion fluid into regions of the brain, said device comprising:

20 an imaging device for capturing at least one of (i) functional and (ii) structural anatomical data;

a processor which:

25 performs and assists in evaluating the functional and structural anatomical data in order to identify advantageous and non-advantageous infusion regions; and

30 produces and evaluates a distribution simulation of an infusion fluid when it is introduced at particular points, on the basis of the captured anatomical data; and
a computer-assisted, medical planning and navigation system for assisting in positioning an infusion device.

19. The device as set forth in claim 18, wherein the imaging device includes a nuclear spin tomograph.

20. The device as set forth in claim 18, wherein the imaging device, the
5 processor and the medical planning and navigation system are connected to each other via data connections, thereby providing a constant or retrievable exchange of data.